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EXAMINER	
SHAFFER, ERIC T	
ART UNIT	**PAPER NUMBER**
3623	

DATE MAILED: 02/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/524,140	CHEN ET AL.	
	Examiner	Art Unit	
	Eric T. Shaffer	3623	

-- The MAILING DATE of this communication appears on the cover sh et with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 December 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 March 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. This communication is in response to the amendments filed December 3, 2003.

Summary Of Instant Office Action

2. Applicant's arguments, filed December 3, 2003, concerning claims 1 – 25 mailed on October 10, 2003 have been considered, deemed unpersuasive and are maintained. Only the rejection under 35 U.S.C. 101 has been rejected.

3. None of the claims 1 - 25 have been cancelled. New claims 26 - 29 have been added. Claims 1 – 29 are addressed in this action.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1 - 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Megiddo et al. (US 6,182,070) in view of Castelli et al (US 5,978,788).

6. As per claims 1 and 26, Megiddo et al. teaches a method of generating association rules as "a method for determining one or more association rules having a predetermined relationship to a dataset" (column 12, lines 37 – 38) and "the steps of generating a predictive association rule

which indicates how much variance in a support value and a confidence value is expected" (column 12, lines 58 – 59).

The method comprising:

a) In a processing system, receiving a volume cube, with dimensions product, customer, merchant, time and area, that represents the purchase volume of customers; This is taught by Megiddo et al., which recites using "Number of Frequent Items", which is a count of each individual product, "Number of Customers", which is a count of each individual customer, the choice of "SuperMarket", "Dept. Store" or "Mail Order" for merchant, and the "Number of Transactions" as purchase volume (column 11, table 1).

b) In a processing system, generating a scoped association cube, a population cube and a base cube based on the association cube, population cube, and the base cube based on the volume cube, wherein the scoped association cubes comprise a plurality of bases from distinct data sources (column 5, lines 6 - 8, "identifying association rules between item sets of transactions is provided in which the computer-based system discovers association rules in a dataset"). Generating a new cube or cubes from an existing cube or cubes is taught by Megiddo et al., which recites "generating one or more synthetic databases from the dataset, each synthetic database containing a plurality of transactions" (column 12, lines 43 – 45).

The association cube, with dimensions product, product2, customer group, merchant, time, area, is taught by Megiddo et al., which recites comparing two product as "if they know that, given a consumer's purchase of a first set of items (a first itemset), the same consumer can be expected, with some degree of probability, to purchase a particular second set of items (a second set)" (column 1, lines 18 –21), "Number of Customers", which is a count of each

individual customer or a group of customers, the choice of "SuperMarket", "Dept. Store" or "Mail Order" for merchant, and the "Number of Transactions" as purchase volume (column 11, table 1).

The population cube, with dimensions product, customer group, merchant, time, area, is taught by Megiddo et al., which recites "Number of Frequent Items" as product, "Number of Customers" as customer group, and merchant as the choice of "SuperMarket", "Dept. Store" or "Mail Order" (column 11, table 1).

The base cube, with dimensions customer group, merchant, time, area, is also taught by Megiddo et al., which recites "Number of Customers" for customer group, and merchant as the choice of "SuperMarket", "Dept. Store" or "Mail Order" (column 11, table 1).

c) In a processing system, deriving a confidence cube and a support cube of an association rule based on the association cube, population cube and the base cube.

The confidence cube, of dimensions product, product2, customer group, merchant, time, area, and the support cube, of dimensions product, product2, time, time2, group and merchant are taught by Megiddo et al., which recites more than one product as "Items per Transaction", customer group as "Number of Customers" and merchant as a choice of "SuperMarket", "Dept. Store" or "Mail Order" (column 11, table 1).

Megiddo et al teaches a system that uses a database to perform data mining with the purpose of extracting statistically based association rules (column 5, lines 38 – 40, "a computer system which may be used for mining databases and in particular may be used for discovering predictive association rules"). Megiddo et al further teaches the use of traditional multi-dimensional database platforms ("the server computer may include a database system, such as

DB2 and Oracle", column 5, line 52) that performs aggregations (column 9, lines 37 – 39, "to find the set of frequent pairs, the association discovery process counts the cross-product of all of the frequent items"). Since the applicant defines a data cube as a multi-dimensional data structure having an aggregated dimension, the Oracle multi-dimensional database with the counting aggregation teaches a device that is the same as the applicant definition of a data cube.

However, the device taught by Megiddo does not specifically teach the database fields of time or area.

Castelli teaches a system which specifically recites the terms "cubes" and "multi-dimensional table" (column 9, lines 51 - 52) in teaching "generating multiple projections and/or representations from the database" (column 3, lines 2 - 3), where "a database can be converted into an initial data cube" (column 3, line 8) and "generating multi-representations of a data cube" (column 3, line 15). Furthermore, Castelli teaches a database that incorporates the fields of time and area as it "contain information on several time and space coordinates" (column 5, lines 9 - 10). Castelli uses these specific differences to reduce the error incurred on applying queries and to deliver data in a progressive fashion so as to "provide approximate results at first and more accurate results later, as needed" (column 3, lines 36 - 37).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the two query-based multi-dimensional database systems of the Megiddo et al data analysis and rule-generation system with the data management data representational Castelli et al system because combining both systems would allow a combined invention to include the time and area as dimensions in the synthetic or multi-dimensional database tables and thereby improve the accuracy of the statistics-based association rules

generation method and system. Incorporating time and area as fields or dimensions will increase the granularity of the data analysis, provide more possible explanations to seemingly significant but coincidental correlations in the data relationships, and decrease the number of rules that are assumed to be true but that are, under closer scrutiny, in fact false, which is known as Type II error. This would have the advantage of prevent marketing and promotional resources from being wasted on projects that were assumed to be true but are in fact false. In the same manner, incorporating cubes and multi-dimensional database tables would also have been obvious because the multi-dimensional data table cubes allow the rules results derived by the Megiddo et al. device to be delivered in stages, with approximate results arriving quickly and more accurate results arriving later on as needed. This provides the benefit of gaining an optimal level of speed and accuracy at a given level of operation within the data processing system.

7. As per claims 2 and 27, Megiddo et al. teaches a method where generating an association cube, a population cube and a base cube based on the volume cube including the step of generating an association cube that has at least two levels and at least two dimensions. This is taught by Megiddo et al., which recites at least two levels in disclosing the three merchant levels of "SuperMarket", "Dept. Store" and "Mail Order" (column 11, table 1). The two dimensions of the association cube is recited by the three types of merchant and the product recited as number of frequent items.

While Megiddo et al. does teach the concepts specified in the claim language, Megiddo et al does not specifically teach the terms "cubes" or "multi-dimensional database".

8. As per claim 3, Megiddo et al. teaches a method where the step of generating an association cube, a population cube and a base cube based on volume includes the step of generating a scoped association rule; wherein the step of deriving a confidence cube and a support cube of an association rule based on the association cube, population cube, and the base cube includes the step of deriving a confidence cube and a support cube of a scoped association rule based on the association cube, population cube, and the base cube. The scoped association rule is taught by Megiddo et al, which recites "discovering purchasing tendencies of consumer side identifying association rules between itemsets of transactions within a database" (column 14, lines 43 - 44).

9. As per claim 4, Megiddo et al. teaches the method with the step of generating an association cube, a population cube and a base cube based on volume includes the step of generating an association rule with conjoint items cube; wherein the step of deriving a confidence cube and a support cube of an association rule based on the association cube, population cube, and the base cube includes the step of deriving a confidence cube and a support cube of an association rule with conjoint items based on the association cube, population cube, and the base cube. Conjoint items, or the ability to consider how buyers consider a range of options, is taught by Megiddo et al., which recites three separate options for a choice of merchant in either "SuperMarket", "Dept. Store" or "Mail Order" (column 11, table 1).

10. As per claim 5, Megiddo et al. teaches the method where the step of generating an association cube, a population cube and a base cube based on volume includes the step of

generating a functional association rule cube; wherein the step of deriving a confidence cube and a support cube of an association rule based on the association cube, population cube, and the base cube includes the step of deriving a confidence cube and a support cube of a functional association rule based on the association cube, population cube, and the base cube. The functional association of using variables to perform calculations, which is taught by Megiddo et al., which recites "Number of Frequent Itemsets" and "Number of Frequent Items", which when multiplied together, produce the product Number of Hypotheses (column 9, lines 68 - 69).

11. As per claim 6, Megiddo et al. teaches the method wherein steps of receiving, generating and deriving using On Line Analytical Processing programming. Receiving is taught by Megiddo et al., which recites "Among other things, the interface functions as an input mechanism for establishing certain variables, including a minimum confidence and support value and the other redetermined/user-defined input parameters disclosed below" (column 6, lines 48 - 52). Generating is taught by Megiddo et al., which recites on-line transactions being used to generate rules as "one or more association rules mined from a database is provided which generates one or more synthetic databases from the dataset, each synthetic database containing a plurality of transactions, each transaction including one or more items, wherein the occurrences of all items in each synthetic database are independent" (column 4, lines 56 - 61). Derriving is taught by Megiddo et al., which recites "the original data from which the association rules have been derived" (column , lines 3 - 4).

12. As per claim 7, Megiddo et al. teaches the method of claim 1 where step (a) includes the steps of:

Receiving a first volume cube that represents the purchase volume of customers for a first region, receiving a second volume cube that represents the purchase volume of customers for a second region, where step (b) includes the step of generating an association cube, a population cube and a base cube based on the first volume cube and the second volume cube.

This is taught by Megiddo et al., which recites the volume, association, population and base cubes as discussed in the analysis of claim 1.

The Megiddo et al patent does not specifically mention the use of regions as fields in a data cube or table. It is notoriously well known to one skilled in the art of computer software development to incorporate dimensions that encompasses regions in the cube data tables because the sales volume of many products varies according to which region of the country said product is marketed in. Some products sell better in the south, while others sell better in the north or on the west coast.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include region as a dimension in the synthetic database tables is to improve the accuracy of the statistics-based association rules generation method and system. Incorporating regions as fields or dimensions will increase the granularity of the data analysis, provide more possible explanations to seemingly significant but coincidental correlations in the data relationships, and decrease the number of rules that are assumed to be true but that are, under closer scrutiny, in fact false, which is known as Type II error. Incorporating regions would prevent marketing resources from being wasted in regions a product would not sell well in and allow said resources to be more effectively used elsewhere.

13. As per claim 8, 9, 17, 18 and 28, Megiddo et al. teaches the system and method where each LDOS comprises a local computation engine for mining and summarizing transaction data ("determining the statistical significance of one or more association rules mined from a database is provided from the database, each synthetic database containing a plurality of transactions", column 4, line 55 - 58) and at least one local OLAP server, with the local data warehouse being adapted to receive and store said transaction data, "means for generating one or more synthetic databases from the dataset, each synthetic database containing a plurality of transactions, each transaction containing one or more items" (column 13, line 52 - 55).

wherein the local computation engine generates the local profile cubes that contains at least partial information regarding customer profiling by periodically mining new transactions flowing into said local data warehouse and deriving patterns for local analysis, said local computation engine also being adapted to incrementally update said local profile cubes, "a method for data mining which may include the statistical significance determining process in accordance with the invention. The method starts at step 102 in which a database is processed (mined) to discover any association rules" (column 9, lines 60 – 64).

The scoped association rules comprising a plurality of bases from distinct data sources and based on said local profile cubes (column 5, lines 6 - 8, "identifying association rules between item sets of transactions is provided in which the computer-based system discovers association rules in a dataset").

The Megiddo et al patent does not specifically mention the use of kind as a field in a profile cube. A general reason why it would be obvious to include kind as a field is that it is notoriously well known in the art of computer software development to incorporate dimensions

that encompasses kind into the profile cube data tables because kind, which consists of sales volume generated by sales events, coupons and discounts is used to break out sales data and determine which part of the sales volume is being achieved by targeting customers with premium offers and which part of sales volume is being achieved by customers paying full price.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include kind as dimensions in the synthetic database tables is to improve the accuracy of the statistics-based association rules generation method and system. Incorporating kind as a field or dimensions will increase the granularity of the data analysis, and allow rules to be generated go beyond merely knowing that, in general, a promotion is effective. Using kind will empower the user to actually identify which specific promotional item or event is the most and least effective at increasing sales volume. This will have the benefit of saving money by avoiding sponsoring ineffective sales events and more appropriately channeling these funds into the most cost effective sales events.

The Megiddo et al patent does not specifically recite the use of time and area as fields in a data cube or table and does not specifically use the terms "cubes" and "multi-dimensional table".

Castelli et al does in fact teach the concept and the terms "cubes" and "multi-dimensional table" (column 9, lines 51 - 52), teaches generating multiple projections and/or representations from the database" (column 3, lines 2 - 3), that "a database can be converted into an initial data cube" (column 3, line 8) and "generating multi-representations of a data cube" (column 3, line 15). Furthermore, Castelli teaches a database device that incorporates the factors of time and area as it "contain information on several time and space coordinates" (column 5, lines 9 -10).

Castelli uses these specific differences to reduce the error incurred on applying queries and to deliver data in a progressive fashion so as to "provide approximate results at first and more accurate results later, as needed" (column 3, lines 36 - 37).

It would have been obvious for one of ordinary skill in the art at the time the invention was made to incorporate cubes and multi-dimensional database into the rules results derived by the Megiddo et al. device because this would allow results to be delivered in stages, with approximate results arriving quickly and more accurate results arriving later on as needed. This provides the benefit of gaining an optimal level of speed and accuracy at a given level of operation within the data processing system.

14. As per claims 10 and 19, Megiddo et al. teaches the system and the claim 18 method where a local data warehouse receives and stores transaction data in a first predetermined interval and wherein said local OLAP engine generates said local profile cubes in a second predetermined interval. This is taught by Megiddo et al., which recites "after executing the steps described below, the identifier kernel outputs protective rules" (column 5, lines 37 - 39). In the Megiddo device, the interval is defined as the time it takes to execute a specific number of steps.

15. As per claims 11 and 20, Megiddo et al. teaches the system and the claim 18 method where GDOS comprises a global data warehouse and at least one global OLAP server,

The global data warehouse for receiving and storing the local profile cubes. This is taught by Megiddo et al., which recites "means for generating one or more synthetic databases from the dataset, each database containing a plurality of transactions" (column 14, lines 23 - 25).

The global computation engine for combining summary information from each of said LDOS to build and incrementally update said global profile cubes and association rules, and for providing feedback to said plurality of LDOS. This is also taught by Megiddo et al., which recites "means for generating one or more synthetic databases from the dataset" (column 14, lines 23 - 24).

16. As per claims 12 and 21, Megiddo et al. teaches the system and method where said local and global profile cubes comprise information of a plurality of customers, said information being derived from transaction data with said customers as stored by said local and global data warehouses, said profiling information specifying at least the following: kind, product, customer, merchant, time and area. This is taught by Megiddo et al., which recites "a computer-based system for discovering purchasing tendencies of consumers by identifying association rules between itemsets of transactions is provided in which the computer-based system discovers association rules in a dataset and generates one or more synthetic databases from the dataset, each synthetic database containing a plurality of transactions wherein the occurrences of all items are independent" (column 5, lines 5 - 20).

17. As per claims 13 and 22, Megiddo et al. teaches the system and method where said local profile cubes are maintained at LDOS and said global profile cubes are maintained at GDOS, each of said local profile cubes being populated by mapping values in transaction data records into each dimension of said profile cube, each of said global profile cubes being retrieved and updated by merging appropriate local profile cubes. This is taught by Megiddo et al., which

recites "all of the combinations of items are found which have a transaction support above the minimum user-defined support and these combinations of items are called frequent itemsets. Next, the frequent itemsets are used to generate desired association rules" (column 2, lines 47 - 52).

18. As per claims 14 and 23, Megiddo et al. teaches the method and the system where said profile cubes are used to derive a plurality of shopping pattern cubes, said shopping pattern cubes comprising;

Shopping behavior of at least one customer. This is taught by Megiddo et al., which recites the ability to break out data by "Number of Customers" (column 11, table 1).

Shopping patterns based on probability distribution; This is taught by Megiddo et al., which recites "means for ranking the identified association rules based on the determined likelihood in order to identify association rules which have a predetermined relationship to the dataset" (column 13, lines 64 - 66) and "The p-value of a test result is the probability of obtaining an outcome as least as extreme as the outcome actually observed assuming that the null hypothesis is true" (column 7, lines 33 - 35).

Shopping patterns based on volume; This is taught by Megiddo et al., which recites determining patterns based on "Number of Transactions" and "Number of Frequent Items" (column 12, table 1).

19. As per claims 15 and 24, Megiddo et al. teaches the system and method where association rules comprise scoped association rules with different bases, each of the bases being

said scoped association rule's population over which said scoped association rules is defined; This is taught by Megiddo et al., which recites " computer usable code means also discovers a plurality of association rules by analyzing the transactions having a similar probability threshold value for each synthetic database" (column 4, lines 25 – 28).

Multidimentional association rules with "customer" being its base, "products" being its item, and "merchant", "area" and "time" being underlying features of said multidimentional association rules; This is taught by Megiddo et al., which recites "Number of Frequent Items", and "SuperMarket", "Dept. Store" and "Mail Order" as merchants (column 11, table 1).

Multilevel association rules with its features being represented at multiple levels. This is taught by Megiddo et al., which recites "the database comprises one or more transactions, wherein each transaction contains one or more items" (column 3, lines 65 - 67).

The Megiddo et al patent does not specifically recite the use of "area" and "time" as fields being underlying features of said multidimentional association rules. A general reason for incorporating area and time would be that it is notoriously well known in the art of computer software development to incorporate dimensions that encompasses time into the cube data tables because sales for many products are seasonal, with sales increasing or decreasing based on season of year, month, or proximity to Christmas or other holidays. Sales of products may also vary with time of month or day of the week. It also is well known to incorporate area or region because the sales volume of many products varies according to which area of the country said product is marketed in. Some products sell better in the south, while others sell better in the north or on the west coast. Similarly, some products sell greater volumes in the city, while others sell more in the country.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include time and area as dimensions in the synthetic database tables is to improve the accuracy of the statistics-based association rules generation method and system. Incorporating time and area as fields or dimensions will increase the granularity of the data analysis, provide more possible explanations to seemingly significant but coincidental correlations in the data relationships, and decrease the number of rules that are assumed to be true but that are, under closer scrutiny, in fact false, which is known as Type II error. This would have the advantage of prevent marketing and promotional resources from being wasted on projects that were assumed to be true but are in fact false.

20. As per claims 16 and 25, Megiddo et al. teaches the system and method where association rules are mined by:

Converting a volume cube into an association cube, a base cube and a population cube, said volume cube representing purchase volumes of customers dimensioned by item, base and feature; The purchase volumes are taught by Megiddo et al., which recites "Number of Transactions" (column 11, table 1).

Deriving a support cube based on said base cube and said association cube; and

Deriving a confidence cube based on said base cube and said association cube;

This is taught by Megiddo et al., which recites "generating one or more synthetic databases from the dataset, each dataset containing a plurality of transactions, the occurrence of all items in each synthetic database being independent"(column 12, lines 43 - 45).

A support cube, with dimensions customer, product, group, merchant, time, time2 and area, is taught by Megiddo et al., which recites "Number of Customers" for customer, "Number of Frequent Items" for product, "Number of Frequent Itemsets" for group, and "SuperMarket, Department Store and Mail Order" for merchant (column 11, table 1).

21. As per claim 29, Megiddo et al teaches a data mining system that extracts predictive association rules from a database of transactions data. The system uses a server (column 5, lines 47 – 49), is accurate within a minimal level of confidence interval constraints and aggregates data by counting the number of customers, transactions and by calculating average values of items per transaction. Megiddo does not teach cubes that also perform aggregations.

Castelli et al teaches a CUBE based system that runs on a server (figure 1, item 106) and that also performs aggregations of data ("avg, count, sum, min, max", column 1, lines 56 - 61).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the Megiddo et al server based data mining and association rule generating system with the Castelli et al server based, aggregation producing CUBE based data base amalgamation system in order to create a system that presented the data rules in a cube based system because presenting the association rules would improve the accuracy of the statistics-based association rules generation method and system by increasing the granularity of the data analysis, provide more possible explanations to seemingly significant but coincidental correlations in the data relationships. This would serve to decrease the number of rules that are assumed to be true but that are, under closer scrutiny, in fact false, which is known as Type II error. This would have the advantage of prevent marketing and promotional resources from

being wasted on projects that were assumed to be true but are in fact false. In the same manner, incorporating cubes and multi-dimensional database tables would also have been obvious because the multi-dimensional data table cubes allow the rules results derived by the Megiddo et al. device to be delivered in stages, with approximate results arriving quickly and more accurate results arriving later on as needed. This provides the benefit of gaining an optimal level of speed and accuracy at a given level of operation within the data processing system.

Response to Arguments

22. Applicant's arguments filed December 3, 2003 have been fully considered, but the same are not persuasive.

a) Applicant argues that neither reference suggests the use of a scoped association cube. However, Megiddo et al does teach the creation and generation of databases of association rules wherein the rules generated are subject to the constraints imposed by the scope of the transactions from which the rules are derived ("identifying association rules between item sets of transactions is provided in which the computer-based system discovers association rules in a dataset", column 5, lines 6 - 8). The use of data cubes in which to store and retrieve said rules or decision support rules data is taught by Castelli et al.

b) Applicant argues that neither reference teaches claims 8, 17 or 26. However, the combination of Megiddo et al with Castelli et al does in fact teach a system for generating association rules mined from transaction data, summarized, and stored in data cubes.

In light of the above stated facts, examiner respectfully states that applicant's arguments have been fully considered, deemed unpersuasive, and the rejections under the prior Office Action, mailed December 3, 2003 are maintained.

Conclusion

23. THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 1.136(a).

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of final action.

24. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Eric Shaffer whose telephone number is (703) 305-5283. The Examiner can normally be reached on Monday-Friday, 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq Hafiz can be reached on (703) 305-9643. The fax number for the organization is (703) 305-0040/308-6306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Receptionist whose telephone number is (703) 305-3900.

Eric Shaffer

February 4, 2004

TARIQ R. HAFIZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600